800 Series Turbine Modules
Auto Synchronizer AS800

ABB

800 Series Turbine Modules
Auto Synchronizer AS800

The Auto Synchronizer AS800 adds automatic circuit-breaker closure capability to the System 800xA or to any other controller with Profibus interface. It can be used for generator to grid synchronization, as well as for peer to peer bus synchronization in switchyard applications.

The AS800 module supports high and low range (0-130 VAC and 0-50 VAC) bus input voltages operating at either 50 or 60 Hz.

The AS800 functionality includes automatic matching of voltage, frequency and phase, as well as automatic generator breaker closure.

Additional Features

Built-in Profibus Interface

- Non-proprietary communication for true open architecture integration

- Master and Line Redundancy

Sync Verification

The AS800 has a built-in independent synchronization circuit which serves as a check to the primary circuit.

When voltage, frequency, and phase match occur, the AS800 will only close the breaker when the primary and secondary synchronization circuits are in agreement.

Dead Bus Capability

The AS800 has the intelligence to recognize dead bus situations, and upon external enabling (Dead Bus Enable input), will perform breaker closure.

Stand-Alone Mode

The AS800 can operate in harmony with a master controller (such as AC800M) via Profibus communication. It can also operate independently with hard-wired digital inputs and serial communication via an RS-232 physical interface.

Inputs

The AS800 field inputs include two AC voltage signals (buses to be synchronized) and eight digital inputs for process feedbacks and Stand-Alone Mode interface.

2 AC Inputs (120VAC 50/60Hz)

- Line / Generator

- Bus A / Bus B (switchyard applications)

2 Digital Inputs (24/48/125VDC, 120VAC)

- Generator Breaker

- Dead Bus Enable

6 Digital Inputs (24/48VDC)

- Breaker Status Feedback

- Independent Relay Feedback

- 4 Stand Alone Mode Permissives

Outputs

There are six outputs used to drive external relays (ROM810) for voltage regulator control, frequency control, and generator breaker control.

The two breaker control relays, Main and Indicheck, can be connected in series.

6 Relay Outputs

- Generator Breaker Main

- Generator Breaker Indicheck

- Volts Raise

- Voles Lower

- Speed Raise

- Speed Lower

800 Series Turbine Modules
## Auto Synchronizer AS800

Applicable Hardware

The Autosynchronizer AS800 has three main components, conveniently designed for simple integration and quick assembly.

- Common Processor Module (CPM810)

    Executes the autosynchronization software algorithms and communicates with the master controller via Profibus DP.

- Auto Synchronization Module (ASM810)

    Receives and digitizes the field inputs.

- Terminal Base Unit

    Houses the CPM810 and ASM810 modules and provides terminals for power, field inputs, and communication.
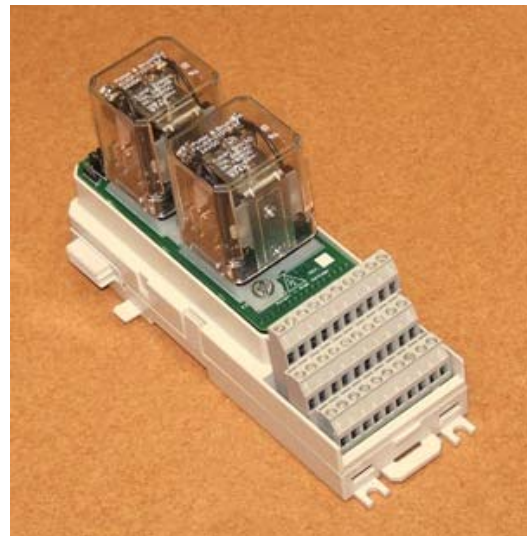
The AS800 can interface to one or more Relay Output Modules (ROM810), based on the requirements of each specific application.

AS800 Hardware

- 1 -CPM810 Common Processor Module

- 1 -ASM810 Auto Synchronization Module

- 1 -TBU810 Terminal Base Unit

- ROM810 Relay Output Module
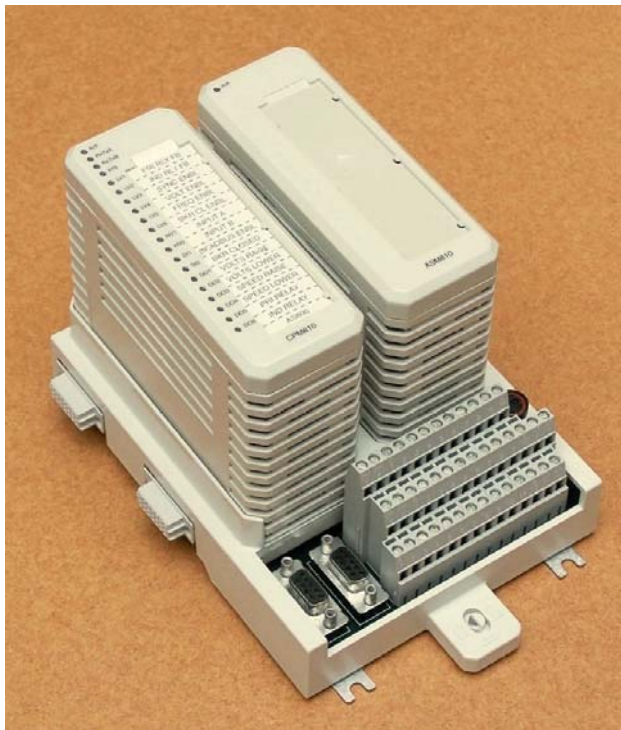
AS800 (CPM810 + ASM810 + TBU810)

ROM810

800 Series Turbine Modules

The Next Way of Thinking

Profibus Interface to Control Processor

- Non-proprietary communication for true open architecture integration

- Master and Line Redundancy

Flexible Installation Configurations

- Din Rail Mountable

- Standard 24VDC power supplies

- Existing cabinet installation for retrofits

- Turbine deck mounting eliminates wiring for new installations

Component Commonality

- CPM810, TBU810 and ROM810 are common to all three turbine products (AS800, TP800, and VP800)

- Provides application flexibility and convenience

- Reduces spare part costs

ABB Inc.
Business Unit Power Generation

2 Acee Drive
Natrona Heights PA 15065-9700
Telephone: (724)295-6022
Fax: (724)295-6560
E-mail: camilo.lopez@us.abb.com

www.abb.com/powergeneration